CE

Invacare® ***Meteor***

Scooter
User Manual

INVACARE®

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1 Introduction

Dear User,

Thank you for purchasing an Invacare® product! We hope you will enjoy your new Scooter.

This manual contains important hints and information on:

- **Safety**
- **Operation**
- **Care and maintenance.**

Please familiarise yourself thoroughly before making your first trip.

Some of the necessary maintenance and adjustments can be carried out by the user. Some adjustments, however, require technical training and are only allowed to be performed by your Invacare® specialised dealer. Any damage or defects caused by non observance of the operating instructions or by poor maintenance are excluded from liability.

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1.1 Important symbols in this manual

WARNING: This symbol warns you of danger!

- *Follow the instructions to avoid injury to the user or damage to the product!*

NOTE:
This symbol indicates hints and suggestions which should help make operating the product easier and point out special functions.

REQUIREMENTS:

- This symbol indicates a list of the different tools and other requirements you will need to do certain maintenance work.

1.2 Type Classification and Area of Use

This vehicle has been classified as a mobility product in class C (for outdoor use). It has been successfully tested for its safety according to German and international standards. When equipped with an appropriate lighting system, the vehicle is suitable to be driven on public roads.

2 Safety Notes

- READ WELL BEFORE OPERATION!

2.1 General Safety Notes

Danger of injury if this scooter is used in any other way than the purpose described in this manual!

- *Adhere strictly to the instructions in this user manual!*

Danger of injury if the scooter is driven when your ability to drive is impaired by medication or alcohol!

- *Never drive any vehicle under the influence of medication or alcohol!*

Danger of damage or injury if the scooter is accidentally set into motion!

- *Switch the power system off before you get in, get out or handle awkward objects!*
- *Be aware that there are only the motor brakes to stop your scooter. When the motors are disengaged, these brakes are automatically deactivated. For this reason, freewheel operation is only recommended on flat surfaces, never on gradients. Never leave your vehicle on a gradient with its motors disengaged. Always re-engage the motors immediately after pushing the vehicle.*

Danger of injury if the On/Off Button is pressed while the vehicle is in motion, due to it coming to an abrupt, sharp stop!

- *If you have to brake in an emergency, simply release the drive lever, which will bring you to a halt! Only switch the vehicle off while in motion as a last resort!*

Danger of injury if the scooter is transported in another vehicle with the occupant seated in it!

- *Never transport the scooter with the occupant seated in it!*

Danger of injury if maximum permissible load is exceeded!

- *Do not exceed the maximum permissible load (see technical specifications)!*

Danger of injury when lifting heavy components!

- *When maintaining, servicing or lifting any part of your scooter, take into account the weight of the individual components, especially the batteries! Be sure at all times to adopt the correct lifting posture and ask for assistance if necessary!*

Danger of injury if you fall off the scooter!

- *If restraining systems are installed (such as seat belts), use them each time you drive the scooter.*

Danger of injury by moving parts!

- *Make sure that no injury is incurred by moving parts of the scooter, like wheels or a Seat Lifter, especially when children are around!*

Danger of fire or breaking down due to electric devices being connected!

- *Do not connect any electric devices to your vehicle that are not expressly certified by Invacare® for this purpose! Have all electrical installations done by your authorised Invacare® Dealer!*

Danger of technical failure and injury if unauthorized spare parts and components are used!

- *Only use original Invacare® spare parts, which have been approved for use with this vehicle!*

2.2 Safety information with regard to care and maintenance

Danger of accident and loss of guarantee if maintenance is insufficient!

- *For reasons of safety and in order to avoid accidents which result from unnoticed wear, it is important that this electric vehicle undergoes an inspection once every year under normal operating conditions (see inspection plan contained in service instructions)!*
- *Under difficult operating conditions such as daily travel on steep slopes, or in the case of use in medical care cases with frequently changing wheelchair users, it would be expedient to carry out intermediate checks on the brakes, accessories and running gear!*
- *If the vehicle is to be operated on public roads, the vehicle driver is responsible for ensuring that the vehicle is in an operationally reliable condition! Inadequate or neglected care and maintenance of the vehicle will result in a limitation of the manufacturer's liability!*

2.3 Safety Information on Electromagnetic Interference

This electric vehicle was successfully tested in accordance with International standards as to its compliance with Electromagnetic Interference (EMI) Regulations. However, electromagnetic fields, such as those generated by radio and television transmitters, and cellular phones, can influence the functions of electric vehicles. Also, the electronics used in our vehicles can generate a low level of electromagnetic interference, which however will remain within the tolerance permitted by law. For these reasons we ask you to please observe the following precautions:

WARNING: Danger of malfunction due to electromagnetic interference!

- *Do not switch on or operate portable transceivers or communication devices (such as radio transceivers or cellular phones) when the vehicle is switched on!*
- *Avoid getting near strong radio and television transmitters!*
- *In case the vehicle should be set in motion unintentionally or the brakes are released, switch it off immediately!*
- *Adding electrical accessories and other components or modifying the vehicle in any way can make it susceptible to electromagnetic interference. Keep in mind that there is no sure way to determine the effect such modifications will have on the overall immunity of the electronic system!*
- *Report all occurrences of unintentional movement of the vehicle, or release of the electric brakes to the manufacturer!*

2.4 Safety Information on Driving and Freewheel Mode

Danger of injury if the vehicle tips over!

- *Only ever negotiate gradients of up to the maximum defined in the Technical Specifications and only with the backrest in an upright position, and the seat lifter in the lowest position (if installed)!*
- *Only ever drive downhill at a maximum of 2/3rds of the top speed! Avoid abrupt braking or accelerating on gradients!*
- *If at all possible, avoid driving on slippery surfaces (such as snow, gravel, ice etc.) where there is a danger of you losing control over the vehicle, especially on a gradient! If driving on such a surface is inevitable, then always drive slowly and with the utmost caution!*
- *Never attempt to overcome an obstacle when on an uphill or downhill gradient!*
- *Never attempt to drive up or down a flight of steps!*
- *Always approach obstacles straight on! Ensure that the front wheels and rear wheels move over the obstacle in one stroke, do not stop halfway! Do not exceed the maximum obstacle height (see Technical Specifications)!*
- *Avoid shifting your centre of gravity as well as abrupt changes of direction when the vehicle is in motion!*

Danger of injury if the vehicle tips over! (Continued)

- *Never use the vehicle to transport more than one person!*
- *Do not exceed the maximum permissible load!*
- *When loading the vehicle, always distribute the weight evenly! Always try to keep the centre of gravity of the vehicle in the middle, and as close to the ground as possible!*
- *Note that the vehicle will brake or accelerate if you change the Driving Speed while it is in motion!*

Danger of injury if you collide with an obstacle when driving through narrow passages such as doorways and entrances!

- *Drive through narrow passages in the lowest Driving Speed and with due caution!*

3 Key features

1) Driving lever
2) Lever for adjusting steering column inclination
3) Control panel
4) Handbrake / wheel lock
5) Keyswitch (ON/OFF)
6) Release lever for sliding seat rails (front right below seat)
7) Release lever for swivelling and removing seat (right below seat)
8) Disengaging lever

4 Driving

4.1 Before driving for the first time...

Before you take your first trip, you should familiarise yourself well with the operation of the vehicle and with all operating elements. Take your time to test all functions and driving modes.

NOTE:
If installed, use the restraining systems (seat belts) each time you use the vehicle.

Sitting Comfortably = Driving Safely

Before each trip, make sure that:

- **You are within easy reach of all operating controls.**
- **The battery charge is sufficient for the distance intended to be covered.**
- **The seatbelt is in perfect order.**

4.2 Taking Obstacles

Your Invacare® Meteor can climb obstacles and kerbstones up to 11 cm in height.

CAUTION: Danger of Tipping Over!

- *Never approach obstacles at an angle!*
- *Put your backrest into an upright position before climbing an obstacle!*

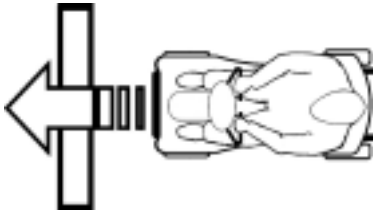
Driving up over an obstacle

- Approach the kerb or obstacle slowly head-on. Shortly before the front wheels touch the obstacle, increase the speed and reduce only after the rear wheels have also climbed the obstacle.

Driving down off of an obstacle

- Approach the kerb or obstacle slowly head-on. Before the front wheels touch the obstacle, reduce speed and keep it until also the rear wheels have come down off of the obstacle.

Correct



Incorrect

4.3 Driving up and down gradients

The Invacare® Meteor can safely climb the following inclines:

10 km/h versions:

- 3-wheeler (up to 175 kg load): 15° (26%)
- 4-wheeler (up to 200 kg load): 15° (26%)

12.8 km/h (8 MPH, UK) and 15 km/h versions:

- 3- and 4-wheeler (up to 150 kg load): 12° (21%)
- 3-wheeler (up to 175 kg load): 10° (17%)
- 4-wheeler (up to 200 kg load): 10° (17%)

WARNING: Danger of tipping over!

- *Only ever drive downhill at a maximum of 2/3rds of the top speed!*
- *Always return the backrest of your seat to an upright position before ascending slopes! We recommend that you lean the backrest slightly to the rear before descending slopes!*
- *Never attempt to ascend or descend a slope on slippery surfaces or where there is a danger of skidding (such as wet pavement, ice etc)!*
- *Avoid trying to get out of the vehicle on an incline or a gradient!*
- *Always drive in a straight direction along the road or path you are travelling on, rather than attempting to zigzag!*
- *Never attempt to turn around on an incline or a slope!*

4.4 Parking and stationary

When parking your vehicle or if your vehicle is stationary for a prolonged period:

- Switch the vehicle's power system off (key switch).
- Activate the parking brake (if available).

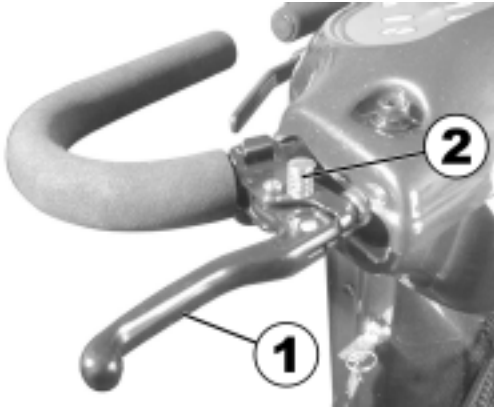
4.4.1 Activating and de-activating the parking brake (option)

Activating the brake

- Pull brake lever (1) and hold it.
- While holding the brake lever, press the latching pin (2) down. The brake lever is latched in place.

Releasing the brake

- Pull the brake lever briefly and let it go. The latching pin pops up. The brake lever is released.



5 Pushing the scooter by hand

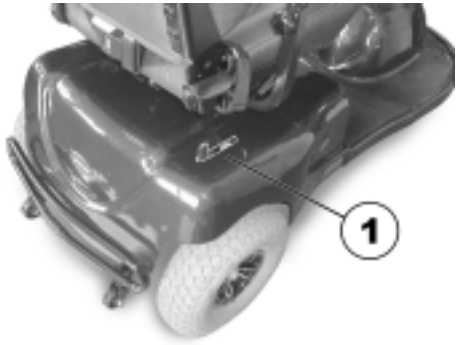
The motors of the scooter are equipped with automatic brakes, preventing the scooter from rolling away out of control when the power supply is switched off. When pushing the scooter, the magnetic brakes must be disengaged.

5.1 Disengaging Motors

Danger of the vehicle running away!

- *When the motors are disengaged (for push operation), the electromagnetic motor brakes are deactivated! When the vehicle is parked, the levers for engaging and disengaging the motors must without fail be locked firmly into the "DRIVE" position (electromagnetic motor brakes activated)!*

The lever for engaging and disengaging the motor is located on the right-hand side at the rear.



Disengaging the motor

- Make sure that the power supply is turned off (keyswitch).
- Press the lever (1) forwards.

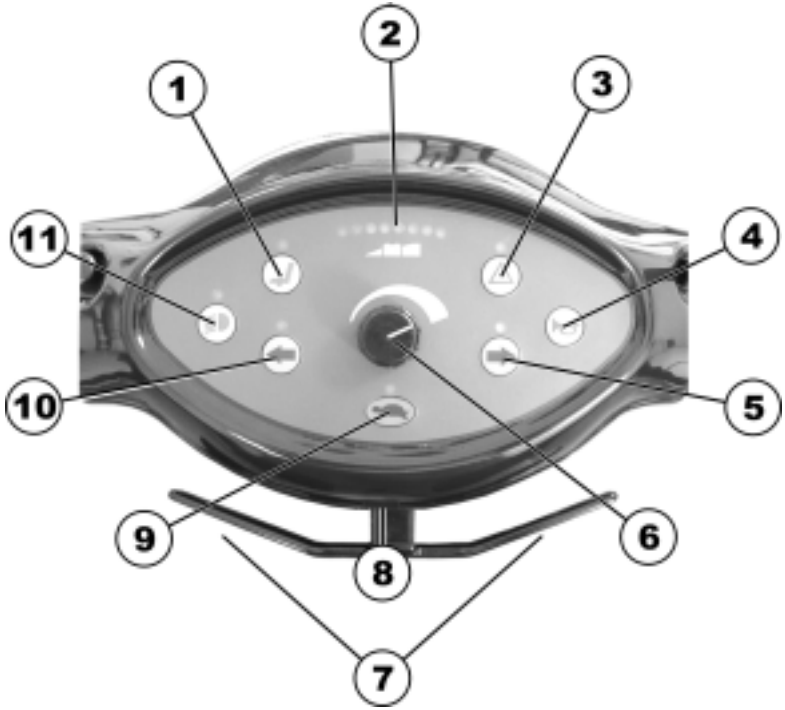
Engaging the motor

- Pull the lever to the rear.

6 The Control Panel

6.1 Control Panel layout

1) Seat Lifter button (if installed)
2) Battery charge indicator
3) Hazard flashers
4) Horn
5) Right turn signal
6) Driving speed adjustment
7) Throttle lever
8) Plug for external charger
9) Reduced Speed Mode
10) Left turn signal
11) Lights



6.1.1 Seat Lifter Button

- Press the button to activate the Seat Lifter (if installed). The LED above the button lights up.
- Raise or lower the seat using the throttle lever.
- Press the button once again to de-activate the Seat Lifter. The throttle lever reverts back to driving mode.

NOTE
If the Seat Lifter is not lowered entirely, then the speed of the scooter is automatically reduced to lower the risk of tipping over. This is indicated by the LED just above the "Reduced Speed Mode" button flashing. Lower the Lifter completely to restore speed to it's normal level. The LED will go out.

6.1.2 Status display

NOTE
The leftmost diode of the battery charge display serves as an error message display (status display). For an explanation of the Error Codes please see chapter **"**Error Codes and Diagnostic Codes**"** on page **"28"**.

6.1.3 Battery charge display

- All diodes lit: full driving range
- Only red and yellow diodes lit: decreased drive range. Charge batteries at end of journey.
- **Only red diodes lit / flashing: battery reserve = very low drive range!**
  Charge batteries immediately!

NOTE
Total discharge protection: After a certain drive time on reserve battery power the electronics switches off the drive automatically and the scooter will be immobile.

6.2 Driving the Scooter

- Switch on the power supply (key switch). The displays on the Control Panel light up. The scooter is ready to drive.

NOTE
If the scooter does not respond after switching on, check the status display (see chapter **"Status display"** on page 23 and chapter **"Diagnostics and Trouble Shooting"** on page 26).

- Set the driving speed with the speed adjustment knob.
- Gently pull the right driving lever towards you to drive forwards.
- Gently pull the left driving lever towards you to drive backwards.

NOTE
The controller is programmed with standard values ex-works. Your Invacare® Dealer can program it to fit your requirements.

NOTE:
To brake quickly, simply let go of the driving lever. It will automatically return to the middle position. The scooter will brake.

6.3 Diagnostics and Trouble Shooting

The electronics system provides diagnostics information to assist technicians to diagnose and correct faults within the scooter system. The existence of a fault will cause the status light to flash in bursts, separated by a pause. The nature of the fault is indicated by the number of flashes in each burst, also referred to as the Flash Code.

Depending on the severity of the fault and impact on user safety, the electronic system will react differently. It may…

- Simply display the Flash Code as a warning and allow normal driving and operation.
- Display the Flash Code, stop the scooter and prevent driving until the electronic system has been turned off and then back on again.
- Display the Flash Code, stop the scooter and prevent driving until the fault has been fixed.

For detailed descriptions of what each Flash Code means, and the probable cause and remedy, see Section **"**Error Codes and Diagnostic Codes**"** on page **28**.

6.3.1 Diagnosing Faults

Use the following troubleshooting guide if the scooter fails to operate.

NOTE
Turn the key switch on before beginning any diagnostics.

If the Status Light is OFF
Check that the key switch is turned ON.
Check that all cables are connected correctly.

If only the leftmost diode of the battery charge display is PERMANENTLY ON
Contact your authorised Invacare® Dealer

If the leftmost diode of the battery charge display is FLASHING
Count the number of flashes and refer to the next section.

6.4 Error Codes and Diagnostic Codes

Number of flashes	Fault	Impact on Scooter	Notes
1	Battery needs charging	Will drive	• Battery charge is running low. Recharge the batteries as soon as possible.
2	Battery voltage too low	Drive inhibited	• Battery charge is empty. Recharge the batteries. • If the scooter is left off for a few minutes, battery charge may recover sufficiently to allow driving for a short period of time. You should only ever do this in an emergency, as this deep-discharges the batteries!
	Lifter raised	Driving speed reduced	• Lower lifter completely.
3	Battery voltage too high	Drive inhibited	• Battery charge is too high. If a charger is plugged in, unplug it. • The electronic system charges the batteries when travelling down slopes or decelerating. Excessive charging in this manner may cause this fault. Turn the scooter power off and then back on again. Turn on the lighting system to use power.

Number of flashes	Fault	Impact on Scooter	Notes
4	Current Limit Time Out	Drive inhibited	• The scooter has drawn too much current for too long, possibly because the motor has been over-worked, jammed or stalled. Turn the scooter power off, leave it off for a few minutes, and then turn the power back on again. • The controller has detected a short-circuited motor. Check the cable harness for short and check the motor: Contact your authorised Invacare® Dealer.
5	Brake Fault	Drive inhibited	• Check that the declutching lever is in the engaged position. • The park brake coil or wiring is faulty. Check the park brake and wiring for open or short circuits. Contact your authorised Invacare® Dealer.
6	Out Of Neutral At Power Up	Drive inhibited	• Throttle is not in neutral position when turning key switch on. Return throttle to neutral, turn power off, and back on again. • Throttle may need to be re-calibrated. Contact your authorised Invacare® Dealer.
7	Speed Pot Error	Drive inhibited	• The throttle or its wiring may be faulty or incorrectly set up. Contact your authorised Invacare® Dealer.
8	Motor Volts Error	Drive inhibited	• The motor or its wiring is faulty. Contact your authorised Invacare® Dealer.

Number of flashes	Fault	Impact on Scooter	Notes
9	Other Internal Errors	Drive inhibited	• Contact your authorised Invacare® Dealer.

7 Adjustment features

7.1 Adjusting the backrest angle

The backrest is held firm by a metal plate on both sides. Both plates have four holes which allow the backrest to be adjusted for various angles. You can do this by selecting various combinations for the holes.

Requirements

- Allen key 4 mm
- Engineer's spanner 10 mm

- Loosen the bolts (1) which hold the backrest on both sides using the engineer's spanner and the Allen key.
- Move the backrest into the required position.
- Reinsert the bolts and tighten.

7.2 Moving the seat position forwards or backwards

The disengaging lever for adjusting the seat is located front right below the seat

- Pull the lever (1) to disengage the seat.
- Slide the seat forwards or backwards into the required position.
- Let go the lever again to lock the seat into its required position.

7.3 Disengaging the seat to rotate it or remove it

The seat can be turned to one side to make getting in and out of the scooter easier. The seat is also easier to remove from this position.

The lever for disengaging the seat is located under the seat (1) on the right.

- Pull the lever forwards to disengage the seat.
- Turn the seat to one side.
- If you want to remove the seat, hold it firmly by the backrest or front edge and remove it upwards.

7.4 Adjusting the armrest width

The hand wheels for adjusting the armrests are located under the seat (1).

- Turn the hand wheels to loosen the fixing for the armrest.
- Adjust the armrests to the required width.
- Retighten the handwheels

7.5 Adjusting the armrest height

The hand wheels for adjusting the armrest height are located on the armrests (1).

- Turn the hand wheels to loosen the fixing for the armrest (1).
- Adjust the armrests to the required height.
- Retighten the handwheels

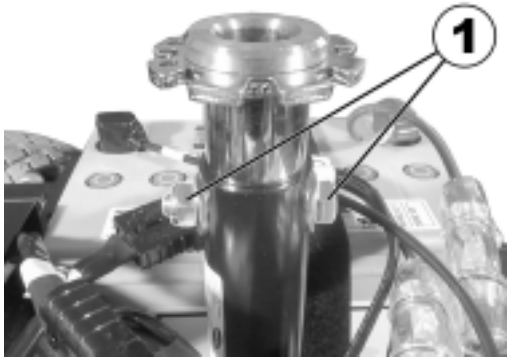
7.6 Adjusting the seat height

The seat height can be adjusted to the following heights (measured from chassis / floor):

- 46 / 64 cm
- 48 / 66 cm
- 49 / 68 cm
- 51 / 71 cm

Requirements:
- 2x open-ended spanners 17 mm

- Removing the seat
- Remove the battery and motor compartment cover.
- Remove the seat pillar locking bolt (1) using both open-ended spanners.



- Adjust the seat height.
- Reinsert the bolt and tighten.

7.7 Adjusting the suspension

The Meteor suspension can be individually adjusted. These adjustments should only be carried out by trained specialists. Please contact your authorised Invacare specialist dealer.

8 Electrical System

8.1 Electronics Protection System

The vehicle's electronics are equipped with an overload-protection system.

If the motors are put under considerable strain for a longer period of time (for example, when driving up a steep hill) and especially when the ambient temperature is high, then the electronic system could overheat. In this case the vehicle's power is reduced gradually until it finally comes to a halt. The Status Display shows a corresponding error code. By switching the power supply off and back on again, the error code is cancelled and the electronics are switched back on. It will take approximately five minutes until the electronics have cooled down enough for the motors to restore full power again.

When the motors are stalled by an insurmountable obstacle, such as a high kerb, and the vehicle driver allows the motors to strain against this hindrance for more than 20 seconds without moving, then the electronics will automatically switch off to prevent the motors from being damaged. The Status Display shows a corresponding error code. By switching off and back on again, the error code is cancelled and the electronics are switched back on.

8.1.1 The main fuse

The entire electric system is protected against overload by two master fuses. The master fuses are mounted on the positive battery cables.

NOTE
A defective main fuse may be replaced only after checking the entire electric system. An Invacare® specialised dealer must perform the replacement.

8.2 Batteries

8.2.1 What you need to know about batteries

Power is supplied by two 12V gel batteries. The batteries are maintenance-free and only need regular charging.

New batteries should always be fully charged once before their first use. New batteries will be at their full capacity after having run through approx. 10 - 20 charging cycles. How fast the batteries will be discharged will depend on many circumstances, such as ambient temperature, condition of the surface of the road, tyre pressure, weight of the driver, way of driving and utilisation of lighting, etc.

NOTE

Gel batteries are not hazardous goods. This classification is based on the German *GGVS Hazardous Goods Road Transport Ordinances*, and the *IATA/DGR Hazardous Goods Rail Transport / Air Transport Ordinances.* Gel batteries may be transported without restrictions, whether by road, rail or by air. Individual transport companies have, however, guidelines which can possibly restrict or forbid certain transport procedures. Please ask the transport company regarding each individual case.

Pay attention to the Battery Charge Indicator! Make sure to charge the batteries when the Battery Charge Indicator shows that battery charge is low. We recommend charging the batteries after each trip, as well as each night over night. Depending on the level of discharge, it can take up to 12 hours until the batteries are fully charged again.

Protect your charger from sources of heat such as heaters and direct sunlight. If the battery charger overheats, charging current will be reduced and the charging process delayed.

To avoid damaging the batteries, never allow them to be fully discharged. Do not drive on heavily discharged batteries if it is not absolutely necessary, as this will strain the batteries unduly and shorten their life expectancy.

In case your vehicle is not used for a longer period of time, then the batteries must be charged at least once a month to maintain a full charge. Alternatively, the vehicle can stay connected to the charger. The batteries cannot be overcharged with the specified charger.

Please use only charging devices in Class 2. This class of chargers may be left unattended during charging. All charging devices which are supplied by Invacare® and comply with these requirements.

8.2.2 Charging the batteries

- Make sure you read and understand the battery charger's User's Manual, if supplied, as well as the safety notes on the front and rear panels of the charger!

WARNING:

Danger of explosion and destruction of batteries if the wrong battery charger is used!

- *Only ever use the battery charger supplied with your vehicle, or a charger that has been approved by Invacare®!*

Danger of electric shock and damage to the battery charger if it is allowed to get wet!

- *Protect the battery charger from water!*
- *Always charge in a dry environment!*

Danger of short circuit and electric shock if the battery charger has been damaged!

- *Do not use the battery charger if it has been dropped or damaged!*

Danger of fire and electric shock if a damaged extension cable is used!

- *Only ever use an extension cable if it is absolutely necessary! In case you must use one, make sure it is in good condition!*

The Meteor has two sockets for charging the batteries. One is located on the rear edge of the operating console (1) (maximum charge current 8A). The other is located on the front side of the battery and motor compartment (2) (maximum charge current 15A).

Connecting the battery charger

- First connect the battery charger to the scooter.
- Then connect the battery charger to the mains.

Disconnecting the battery charger from the scooter

- First disconnect the battery charger from the mains.
- Then unplug the battery charger from the scooter.

8.2.3 Removing and fitting batteries

WARNING:

Danger of injury if the batteries are not handled correctly during assembly and maintenance work!

- *New batteries should be installed by authorised technicians!*
- *Observe the warnings on the batteries!*
- *Take into account the heavy weight of the batteries!*
- *Only ever use the battery type defined in the technical specifications!*

Danger of fire and burns if battery terminals are short-circuited!

- *DO NOT short-circuit battery terminals with a tool!*

WARNING:

Corrosion and burns from acid leakage if batteries are damaged!

- *Remove clothes that have been soiled by acid immediately!*

After contact with skin:

- *Immediately wash affected area with lots of water!*

After contact with eyes:

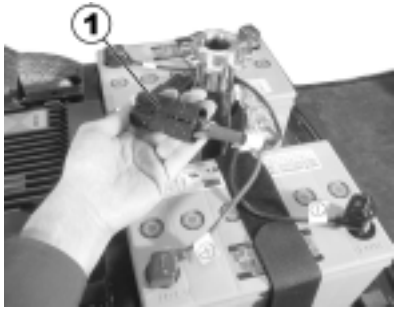
- *Immediately rinse eyes under running water for several minutes; consult a physician!*

8.2.3.1 Removing the batteries

Requirements:
- 2x open-ended spanners 11 mm

- Remove seat (see chapter **"Releasing seat for turning or removal"** on page **"**33**"**.
- Remove the battery and motor compartment covers by pulling on the rear edge.

- Disconnect the two battery cable plug connections (1).



- Release the battery holder strap.
- Removing the batteries.

- Loosen the black cable battery clamp on the negative battery terminal with the open-ended spanner, and remove the cable.
- Loosen the red cable battery clamp on the positive battery terminal with the open-ended spanner, and remove the cable.
- Repeat the procedure for the other battery

NOTE:
Replacing new batteries takes place in reverse order.

8.2.3.2 How to handle damaged batteries correctly

WARNING:

Corrosion and burns from acid leakage if batteries are damaged!

- *Remove clothes that have been soiled by acid immediately!*

After contact with skin:

- *Immediately wash affected area with lots of water!*

After contact with eyes:

- *Immediately rinse eyes under running water for several minutes; consult a physician!*

Requirements:

- Safety goggles
- Acid-resistant gloves
- Acid-resistant receptacle for transportation

- Always wear appropriate safety clothing when handling damaged batteries.
- Place damaged batteries in an acid-resistant receptacle immediately after removing them.
- Only ever transport damaged batteries in an appropriate acid-resistant receptacle.
- Wash all objects that have come into contact with acid with lots of water.

Disposing of dead or damaged batteries correctly

Dead or damaged batteries can be given back to your dealer or directly to Invacare®.

9 Care and maintenance

NOTE:
Have your vehicle checked once a year by an authorised Invacare® dealer in order to maintain it's driving safety and roadworthiness.

Cleaning the vehicle

When cleaning the vehicle, pay attention to the following points:

- Only use a damp cloth and gentle detergent.
- Do not use any abrasive or scouring liquids.
- Do not subject the electronic components to any direct contact with water.
- Do not use high-pressure cleaning devices.

Maintenance Jobs	When Delivered	Weekly	Monthly
Seat and backrest padding:			
• Check for perfect condition.			✓
Tyres:			
• Have tyres checked for specified air pressure (2,5 bar).	✓	✓	
Front wheels			
• Front wheels must spin smoothly.		✓	
• If wheels wobble or do not spin easily, adjust steering pivot pin or front wheel bearing.			✓
Rear wheels:			
• Test wheel for firm seat on the axle drive shaft.			✓
• Rear wheels must spin without wobbling			✓
Electronics / Electrical System:			
• Check all plug connections for condition and firm connection.			✓
• Have batteries been fully charged before the daily operation?	Before every trip		
• Are all holders, screws firmly fixed, tight and safe?			✓
• Are all electric bulbs of the lighting system (if applicable) in working order?	Before each trip		
Cleaning:			
• Clean all parts carefully.	When necessary		

Once a year you should have your vehicle inspected and serviced by your authorised dealer. A complete checklist of necessary maintenance work can be found in the Service Manual, which can be obtained from Invacare®.

10 Repair Instructions

The following are instructions on repairs that can be performed by the user. For the specifications of spare parts please see "**Technical specifications**" on page **55**, or consult the Service Manual, available from Invacare®. In case you require assistance, please contact your Invacare® Dealer.

10.1 Repairing a flat tyre

WARNING: Danger of damage or injury if the vehicle is accidentally set into motion during repairs!

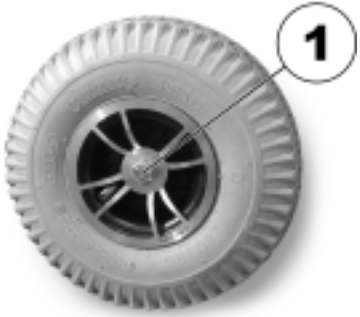
- *Switch the power off (ON/OFF Button)!*
- *Engage the motors!*
- *Secure the vehicle against rolling away by placing wedges under the wheels!*

10.1.1 Repairing punctures (pneumatic tyres of type 4.00 - 5)

10.1.1.1 Removing the rear wheel

Requirements:
- Open spanner, 19 mm.
- Rubber hammer

- Jack the scooter up and place a wooden block or similar under it to support it.
- Remove the wheel locknut (1) with a 19 mm open-ended spanner.
- Remove the wheel. It may be necessary to carefully free the wheel off the axle by tapping lightly with the rubber hammer on the rear face of the wheel



Problems when removing wheel?
It may be necessary to use a special tool Please ask your Invacare® dealer to help you.

Reassembly
Reassembly takes place in reverse order.
Make sure that you refit the wheel on the same side and for the same direction of travel as previously.

10.1.1.2 Removing the front wheel (4-wheeler version)

Requirements:
- Open spanner, 17 mm.
- Rubber hammer

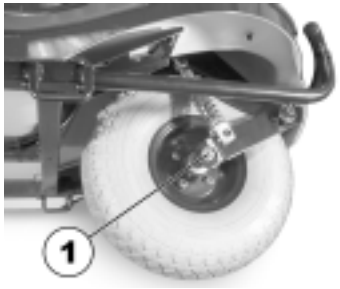
- Jack the scooter up and place a wooden block or similar under it to support it.
- Remove the wheel locknut (1) with a 17 mm open-ended spanner.
- Remove wheel. It may be necessary to carefully free the wheel off the axle by tapping lightly with the rubber hammer on the rear face of the wheel

Reassembly
Reassembly takes place in reverse order. Make sure that you refit the wheel on the same side and for the same direction of travel as previously.

10.1.1.3 Removing the front wheel (3-wheeler version)

Requirements:
- 2x open-ended spanners 17 mm

- Carefully tip the scooter onto one side.
- Remove the wheel locknuts (1) using both open-ended spanners, then remove the wheel from the fork.



Reassembly
Reassembly takes place in reverse order. Make sure that the wheels are reassembled to give the same direction of travel as previously.

10.1.1.4 Repairing punctured tyres

Requirements (general)

- inner tube repair set **or** a new inner tube
- talcum powder
- open-ended spanner, 13 mm

- Remove valve cap.
- De-inflate the tyre by pressing in the centre valve pin.
- Remove the four nuts (1) on the rear of the wheel using the 13 mm open-ended spanner.
- Remove both wheel rim halves out of the tyre and remove the inner tube.
- Repair the inner tube and refit in the wheel, or replace it with a new inner tube.

Did the old inner tube get wet during the repair?
If you repaired the old inner tube and reused it, and it became wet during repair, it is much easier to refit it into the wheel if you lightly powder it with talcum powder.

- Refit the wheel rim parts from outside into the tyre.
- Pump up the tyre lightly.
- Reinsert the nuts and bolts which hold the wheel rim together and tighten fully.
- Make sure that the tyre is properly located on the wheel rim.
- Inflate the tyre up to the recommended tyre pressure (3.5 bar or 50 psi).
- Check to make sure that the tyre is still located properly on the wheel rim.
- Screw the valve cap back on.
- Reassemble the wheel.

11 Technical specifications

	3-wheeler version	4-wheeler version
Electrical system		
Motor (10 km/h)	• 400 W	• 400 W
Motor (12.8 km/h, 8 MPH, UK)	• 400 W	• 400 W
Motor (15 km/h)	• 400 W	• 400 W
Batteries	• 2 x 50 AH • 2 x 60 AH • 2 x 70 AH	• 2 x 50 AH • 2 x 60 AH • 2 x 70 AH
Main fuses (10 km/h)	• 60 A	• 60 A
Main fuses (12.8 km/h, 8 MPH, UK)	• 60 A	• 60 A
Main fuses (15 km/h)	• 60 A	• 60 A
Weight		
Without batteries, without seat	• 60 kg*	• 65 kg*
Without batteries	• 80 kg	• 85 kg
With 70 Ah batteries	• 127 kg	• 132 kg
Weight of heaviest part	• 21.4 kg	• 25 kg
Maximum load (operating load)	• 175 kg	• 200 kg

	3-wheeler version	4-wheeler version
Dimensions		
Height	• 123 cm*	• 123 cm*
Width	• 65.5 cm*	• 65.5 cm*
Length (with bumper and anti-tip device)	• 141 cm*	• 146 cm*
Seat height (measured from chassis / from floor, manually adjustable)	• 46 / 64 cm* • 48 / 66 cm* • 49 / 68 cm* • 51 / 71 cm*	• 46 / 64 cm* • 48 / 66 cm* • 49 / 68 cm* • 51 / 71 cm*
Backrest height (without headrest)	• 44 cm*	• 44 cm*
Backrest height (with headrest)	• 63 cm*	• 63 cm*
Backrest angle (manually adjustable)	• 0°, 10°, 15°, 30°	• 0°, 10°, 15°, 30°
Seat width	• 44-55 cm*	• 44-55 cm*
Seat depth	• 44 cm*	• 44 cm*
Armrest height	• 24-30 cm*	• 24-30 cm*
Tyres		
Tyre pressure	• 2.5 bar (40 psi)	• 2.5 bar (40 psi)

	3-wheeler version	4-wheeler version
Travelling performance		
Speed	• 10 km/h • 12.8 km/h (8 MPH, UK) • 15 km/h	• 10 km/h • 12.8 km/h (8 MPH, UK) • 15 km/h
Safe climbing of inclines		
10 km/h version	• up to 175 kg operating load: 15° (26%)	• up to 200 kg operating load: 15° (26%)
12.8 km/h (8 MPH, UK) and 15 km/h versions	• up to 150 kg operating load: 12° (21%) • up to 175 kg operating load: 10° (17%)	• up to 150 kg operating load: 12° (21%) • up to 200 kg operating load: 10° (17%)
Maximum obstacle height	• 11 cm	• 11 cm
Tightest turning radius	• 130 cm	• 161 cm
Drive range in accordance with ISO 7176**		
10 km/h version		
50 Ah batteries	• 30 km	• 30 km
60 Ah batteries	• 35 km	• 35 km
70 Ah batteries	• 40 km	• 40 km
12.8 (8 MPH, UK) and 15 km/h versions		
50 Ah batteries	• 35 km	• 35 km
60 Ah batteries	• 45 km	• 45 km
70 Ah batteries	• 50 km	• 50 km

* Approximate values.

** Note: The scooter drive range is heavily dependent on various factors such as the battery charger status, the environmental temperature, the flatness of the route chosen, the state of the roads, the tyre pressure, the driver's weight, driving style and use of batteries for lighting, actuators etc.

12 Inspections Performed

It is confirmed by stamp and signature that all jobs listed in the inspection schedule of the Service and Repair Instructions have been properly performed. The list of the inspection jobs to be performed can be found in the Service Manual which is available through Invacare®.

Delivery Inspection	1st Annual Inspection
Stamp of authorised Dealer / Date / Signature	Stamp of authorised Dealer / Date / Signature
2nd Annual Inspection	3rd Annual Inspection
Stamp of authorised Dealer / Date / Signature	Stamp of authorised Dealer / Date / Signature
4th Annual Inspection	5th Annual Inspection
Stamp of authorised Dealer / Date / Signature	Stamp of authorised Dealer / Date / Signature

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